IN THE CLAIMS:

1. (Currently Amended) A flexible heat exchanger comprising a pair of flexible thermoplastic polymer films each of which comprises an aromatic polyimide substrate film showing no glass transition temperature or a glass transition temperature of [[304°C]] 340°C or higher and a thermoplastic aromatic polyimide surface film showing a glass transition temperature in the range of 190 to 300°C fixed to the substrate film in such manner that the surface films face each other, which are in part fused together, whereby producing between the polymer films a conduit pattern through which a fluid passes.

Claims 2-4. (Cancelled)

5. (Original) The flexible heat exchanger of claim 1, which has a heat conductive film on a surface thereof.

6. (Original) The flexible heat exchanger of claim 5, wherein a flexible film having a heat radiant metal layer on one side is fixed to the heat conductive film.

7. (Original) The flexible heat exchanger of claim 6, which has a heat resistant porous film on a surface having no heat conductive film thereon.

8. (Original) A space vehicle having the flexible heat exchanger of claim 1 on a surface thereof.

9. (Original) An electronic apparatus having the flexible heat exchanger of claim 1 on a surface thereof.

10. (Original) An electronic part having the flexible heat exchanger of claim 1 on a surface thereof.

11. (Original) A solar heat collector having the flexible heat exchanger of claim 1 on a surface thereof.

12. (Original) A method of manufacturing the flexible heat exchanger of claim 1 which comprises the steps of placing one flexible thermoplastic polymer film on another flexible thermoplastic polymer film and fusing both polymer films in part to combine both polymer films together in part to form the conduit pattern between the polymer films.

13. (Original) A method of manufacturing the flexible heat exchanger of claim 1 which comprises the steps of placing one flexible thermoplastic polymer film on another flexible thermoplastic polymer film via a copper foil in a conduit pattern, fusing both polymer films to combine both polymer films together in part, and etching out the copper foil to form the conduit pattern between the polymer films.

14. (Original) A method of manufacturing the flexible heat exchanger of claim 1 which comprises the steps of placing one flexible thermoplastic polymer film on another flexible thermoplastic polymer film via an intervening flexible thermoplastic polymer film from which a conduit pattern is already cut out, and fusing both polymer films on the intervening flexible thermoplastic polymer film to combine both polymer films together in part to form the conduit pattern between the polymer films.

15. (Original) A method of manufacturing the flexible heat exchanger of claim 1 which comprises the steps of placing one flexible thermoplastic polymer film on another flexible thermoplastic polymer film, heating both polymer films in a conduit pattern by applying heat to both polymer films via a heat insulating material in the conduit pattern, and fusing both polymer films to combine both polymer films together in part to form the conduit pattern between the polymer films.

16. (Original) A method of manufacturing the flexible heat exchanger of claim 1 which comprises the steps of placing one flexible thermoplastic polymer film on another flexible thermoplastic polymer film, heating both polymer films in a conduit pattern

by applying heat to both polymer films by means of a thermal head in a reverse pattern of the conduit pattern, and fusing both polymer films on the intervening flexible thermoplastic polymer film to combine both polymer films together in an area other than the conduit pattern to form the conduit pattern between the polymer films.

17. (Original) A method of manufacturing the flexible heat exchanger of claim 1 which comprises the steps of placing one flexible thermoplastic polymer film on another flexible thermoplastic polymer film via a heat-insulating film in a conduit pattern, fusing both polymer films to combine both polymer films together in an area other than the conduit pattern part, and removing the heat-insulating film to form the conduit pattern between the polymer films.

18. (Previously presented) The flexible heat exchanger of claim 1, which has a thickness in the range of 5 μm to 20 mm.

19. (Previously presented) The flexible heat exchanger of claim 1, which has a linear expansion coefficient of MD, TD and an average of MD and TD, in the range of $10x10^{-6}$ to $35x10^{-6}$ cm/cm/°C at 50-200°C.

20. (Previously presented) A flexible heat exchanger comprising a pair of flexible thermoplastic polymer films, each of which includes an aromatic polyimide substrate film comprising polyimide produced from an aromatic tetracarboxylic acid compound selected from the group consisting of 3,3',4,4'-biphenyltetracarboxylic dianhydride and pyromellitic dianhydride and a diamine compound selected from the group consisting of p-phenylenediamine and a combination of p-phenylenediamine and 4,4'-diaminophenyl ether, and a thermoplastic aromatic polyimide surface film comprising polyimide produced from an aromatic tetracarboxylic acid compound comprising 2,3,3',4'-biphenyltetracarboxylic dianhydride and 4,4'-oxydiphthalic dianhydride and a diamine compound selected from the group consisting of 1,3-bis(4-aminophenoxybenzene) and 1,3-bis(3-aminophenoxybenzene), wherein the thermoplastic aromatic polyimide surface film is fixed to the substrate film in such manner that the surface films face each other, and wherein the thermoplastic polymer

films are fused together on an interface between the thermoplastic aromatic polyimide surface films, except in an area of a conduit pattern having turns on a plane of the polymer films, whereby producing between the polymer films a conduit pattern through which a fluid passes.